

Claims

1. An equipment in the transfer of a paper/board web (W) in a paper or board machine, **characterized** in that, in the transfer of the web (W), a transfer belt (H₁₀₀)
5 is employed, to which the web (W) is affixed by the effect of adhesion and which transfer belt is passed in such a way in connection with the paper/board machine that it is in contact with a roll (10a₁ or 10a₂ or S₁₀₀) that forms the press nip of the last press in the press section (P), and that the web (W) is passed from the press, while it adheres to the transfer belt (H₁₀₀), further, and that thermal energy is supplied to
10 the web while the web adheres to the transfer belt (H₁₀₀).
2. An equipment as claimed in claim 1 in the transfer of a web (W) in a paper or board machine, **characterized** in that the dryer section comprises at least one group of drying cylinders in which, in stead of a conventional wire draw, a transfer belt
15 (H₁₀₀) is employed, to which the web (W) is affixed by the effect of adhesion and which transfer belt is passed over drying cylinders (K₁,K₂...) and reversing rolls (E₁,E₂...) and further in said group (R₁) of drying cylinders in the dryer section.
3. An equipment as claimed in claim 1 in the transfer of a web (W) in a paper or
20 board machine, **characterized** in that there is a transfer belt (H₁₀₀) at least in the first group (R₁) of drying cylinders in the dryer section.
4. An equipment as claimed in any of the preceding claims in the transfer of a web (W) in a paper or board machine, **characterized** in that the transfer belt (H₁₀₀) is
25 impenetrable by air and water.
5. An equipment as claimed in any of the preceding claims in the transfer of a web (W) in a paper or board machine, **characterized** in that the reversing rolls (E₁,E₂...) are smooth-faced rolls and that the web (W) runs at the rolls (E₁,E₂...) while transferred by the transfer belt (H₁₀₀) and remains on the face of the transfer belt (H₁₀₀)
30 by the effect of the adhesion force applied by the transfer belt (H₁₀₀) to the web.

6. An equipment as claimed in any of the preceding claims in the transfer of a web (W) in a paper or board machine, **characterized** in that the transfer belt run, which has been passed as a closed loop in the first group (R_I) of drying cylinders in the dryer section, has been passed additionally at least through the press nip (N_1) formed
5 between the press rolls ($10a_1, 10a_2$) in the last press (P_N) in the press section (P), in which connection the web (W) adheres to the transfer belt (H_{100}) in the press nip (N_1), and the transfer of the web from the press into the dryer section into its first group (R_I) of drying cylinders is a so-called closed web draw supported by the transfer belt (H_{100}).

10

7. An equipment as claimed in any of the preceding claims in the transfer of a web (W) in a paper or board machine, **characterized** in that, after the group (R_I) of drying cylinders provided with a transfer belt (H_{100}), the dryer section (K) comprises a second group (R_{II}) of drying cylinders, into which the web (W) is trans-
15 ferred as a closed draw, and which second group (R_{II}) of drying cylinders comprises a conventional wire draw (H_2), in which connection the web (W) is transferred over drying cylinders and suction rolls ($K_1, S_1, K_2, S_2, \dots$), meandering in loop shape, and kept in connection with the suction rolls (S_1, S_2, \dots) by means of a pressure produced in the interior of the suction rolls.

20

8. An equipment as claimed in any of the preceding claims in the transfer of a web (W) in a paper or board machine, **characterized** in that the group (R_I) of drying cylinders which comprises a transfer belt run (H_{100}) is provided with impingement drying units ($11a_1, 11a_2, \dots$), through which a drying medium, preferably steam,
25 heated air or heated gas, is passed into connection with the web (W) in order to increase the drying capacity.

9. An equipment as claimed in any of the preceding claims in the transfer of a web (W) in a paper or board machine, **characterized** in that the transfer belt (H_{100}) has
30 been passed through the last press nip (N_1) in the press section (P) and so that the transfer belt has been passed over the alignment rolls ($12a_1, 12a_2$), and that, through the nip (N_1), additionally a press felt (H_n) has been passed, the web (W) being

transferred from the nip (N_1) further, while adhering to the face of the transfer belt, and further onto the roll (100), in whose connection at least one, preferably two, impingement drying units ($11a_1, 11a_2$) have been fitted, the paper/board web (W) being dried by means of a heating medium passed from said impingement drying units, and from which roll (100), which is provided with the impingement drying units ($11a_1, 11a_2$), the web (W) is passed, while adhering to the face of the transfer belt (H_{100}), further into connection with the first drying group (R_1) in the dryer section (K).

10 10. An equipment as claimed in claim 1, **characterized** in that the web (W) is passed through the last press nip (N_1) in the press (P), through which nip also the transfer belt (H_{100}) has been passed, the web (W), adhering to the face of said transfer belt, being passed further along a linear run (D_1), in connection with which run support rolls ($120a_1, 120a_2 \dots$) are placed, and an impingement drying unit ($11a_1$) being placed at the opposite side of said run (D_1), which impingement drying unit comprises an oblong hood (110), and that, after the impingement drying unit ($11a_1$), the web is transferred from the face of the transfer belt (H_{100}) into connection with the dryer section (K).

20 11. An equipment as claimed in claim 1, **characterized** in that the transfer belt (H_{100}) has been passed through the press nip (N_1) of the last press ($10a_1, 10a_2$) in the press section (P), and that the web (W), adhering to the face of the transfer belt (H_{100}), is passed on the face of the transfer belt along with the transfer belt run (H_{100}) that is passed vertically along with support rolls ($120a_1, 120a_2 \dots$) upwards, in connection with which run there is an impingement drying unit ($11a_1$), and that, from the last support roll, the web (W) is passed on the face of the transfer belt (H_{100}) downwards into connection with a second impingement drying unit ($11a_2$) and further, after the second impingement drying unit ($11a_2$), into the first group (R_1) of drying cylinders in the dryer section (K).

30

12. An equipment as claimed in any of the preceding claims, **characterized** in that the last press nip (V) is a so-called equalizing press with no felt.

13. A method in the transfer of a web (W) in connection with a paper or board machine, **characterized** in that the web (W) is transferred on the face of a transfer belt (H_{100}), that the web (W) is passed on the face of the transfer belt (H_{100}), being affixed to the belt face by means of adhesion, from the last press ($10a_1, 10a_2$ or
5 $10a_1, S_{100}$) in the press section (P) so that the transfer belt (H_{100}) is in contact with a press roll ($10a_1$ or S_{100}) of the last press.
14. A method as claimed in claim 13 in the transfer of a web in connection with a paper or board machine, **characterized** in that the web (W) is passed, while
10 meandering in loop shape and while adhering to the face of a transfer belt (H_{100}), from a drying cylinder (K_1) in the group (R_I) of drying cylinders in the dryer section (K) onto a reversing roll (E_1) and further from the reversing roll onto the next drying cylinder (K_2) and further in the group (R_I) of drying cylinders.
15. A method as claimed in the preceding claim in the transfer of a web in connection with a paper/board machine, **characterized** in that the transfer belt (H_{100}) has been passed as a closed loop, besides over the drying cylinders (K_1, K_2, \dots) and the reversing rolls (E_1, E_2, \dots) in the group (R_I) of drying cylinders in the dryer section (K), also through the press nip (N_1) in the last press (P_N) in the press section (P).
20
16. A method as claimed in any of the preceding claims in the transfer of a web in connection with a paper/board machine, **characterized** in that, in the invention, the drying capacity is increased by passing a heat transfer medium, such as steam, warm air or gas, into connection with the web (W) through an impingement drying unit
25 ($11a_1, 11a_2, \dots$), which impingement drying unit has been fitted in connection with a reversing roll/rolls (E_1, E_2, \dots).
17. A method as claimed in any of the preceding claims in the transfer of a web in connection with a paper/board machine, **characterized** in that, in the method, the
30 web (W) is transferred in such a drying group (R_I) in the dryer section (K) as comprises a transfer belt (H_{100}) and in which group (R_I) of drying cylinders suction rolls have been substituted for by conventional reversing rolls (E_1, E_2, \dots) which are

provided with a smooth non-perforated face (e), and that after this the web is transferred into a conventional group (R_{II}) of drying cylinders provided with single-wire draw in the dryer section (K), in which group the web is passed, while meandering in loop shape, from a drying cylinder (K_1) onto a suction roll (S_1) and
5 from the suction roll (S_1) onto a second drying cylinder (K_2) and further in said second group (R_{II}) of drying cylinders, in which second group (R_{II}) of drying cylinders suction rolls are employed as reversing cylinders.

18. A method as claimed in any of the preceding claims in the transfer of a web in
10 connection with a paper/board machine, **characterized** in that, in the first group (R_I) of drying cylinders, the web (W) is transferred as a closed loop over drying cylinders (K_1, K_2, \dots), which are preferably steam-heated drying cylinders, and over reversing rolls (E_1, E_2, \dots) and additionally through the press nip (N_1) of a press (P_N), which press (P_N) is preferably an extended-nip press.

15 19. A method as claimed in claim 13 in the transfer of a web in connection with a paper/board machine, **characterized** in that the web is passed from the last press in the press section (P), while adhering to a transfer belt (H_{100}), which transfer belt (H_{100}) has been passed as a closed loop through the press nip (N_1), and that the web
20 is passed along with the transfer belt (H_{100}) over a roll (100) with a large diameter, which roll comprises, in its connection, at least one impingement drying unit ($11a_1, 11a_2, \dots$), through which a drying medium, such as warm air or steam, is passed into connection with the web (W) to be dried, and that, from the roll (100) which is provided with an impingement drying unit/units in its connection the web is passed
25 further into the first drying group (R_I) in the dryer section (K).

20. A method as claimed in claim 13 in the transfer of a web in connection with a paper/board machine, **characterized** in that, in the method, the web is passed from the last press ($10a_1, 10a_2$) in the press section along with the transfer belt (H_{100})
30 along a linear run (D_1) of the transfer belt, in connection with which linear run (D_1) there are support rolls ($120a_1, 120a_2, \dots$) and, at the opposite side of the run (D_1), there is an impingement drying unit ($11a_1$), which is a construction that comprises

an oblong hood (110), through which construction a heating medium, such as warm air or steam, is passed into connection with the web (W) in order to dry the web, and that, after the impingement drying unit, the web (W) is passed from the transfer belt into the first group (R_I) of drying cylinders in the dryer section (K).

5

21. A method as claimed in claim 13 in the transfer of a web in connection with a paper or board machine, characterized in that, in the method, the web is passed, while adhering to the face of the transfer belt (H_{100}), from the last press ($10a_1, 10a_2$) of the press section (P) so that the web (W) is first made to run vertically along the transfer belt (H_{100}) supported by support rolls ($120a_1, 120a_2, \dots$) upwards, in which connection, in connection with said vertical run, there is a first impingement drying unit ($11a_1$), and that the web is made to run from the last support roll along the faces of the support rolls ($120a_n, 120a_{n-1}, \dots$) along with the transfer belt (H_{100}) that is passed downwards, in connection with which downward run there is a second
- 10
- 15
- impingement drying unit ($11a_2$), and that the web (W) is passed after the second impingement drying unit ($11a_2$) from the transfer belt (H_{100}) into the first group (R_I) of drying cylinders in the dryer section (K).